X3™ USER'S MANUAL

SERIAL # X3-2006 AND LATER MODELS
GAS AND SINGLE HYDRAULIC POWERED UNITS
(REFER TO TRIPLE HYDRAULIC MANUAL)

CAUTION: MAX RPM 3000

SMITH Manufacturing is always looking to improve our manuals. Should you need further assistance in using or maintaining your equipment and cannot find it within the pages of this manual, please contact us.
Your suggestions are greatly appreciated.

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INTRODUCTION

Congratulations on buying the new Smith X3™!

The X3™ (patent pending) is an triple head Eraser that attaches to most skid loader, tractor or truck body for removing striping, curing compounds, and more while leaving the road in a natural condition. Powered by gas, diesel, or hydraulics, the X3™ allows a single operator to remove from 1" - 20" wide (when engaging the swivel attachment with outboard wheel assembly). The X3™ is a versatile, full-featured eraser that grows as your needs grow, with additional units: inline for faster removal, or offset for wider removal.

Designed to remove with a unique swivel wheel sweeping removal method pattern, the X3™ feathers the substrate edges to eliminate the grooving pattern or "ghost line".

Select your style of removal tool: from our gentle action set of 3 steel pin cutters, to our aggressive, 72 pin tungsten carbide, or our 144 pin carbide gentle abrading and NEW, 216 pin tungsten carbide pin cutter for concrete. Diamond Cup Wheel, Wire Brushes, or Tungsten Carbide Mini-Pick Heads are available for your other surface preparation and line removal needs..

You will obtain years of satisfying service when your machine is properly used and maintained. Please read completely this guide and parts list manual to assure your REMOVAL SUCCESS.

If you have any questions about the operation of your machine or would like to order replacement parts, please contact your SMITH Dealer directly, or call SMITH at **1-800-653-9311 or (954) 941-9744** for the name of your local dealer.

UNCRATING YOUR EQUIPMENT

When you uncrate your equipment, make certain that the machine has not been damaged and that all fasteners and guards are properly tightened. Battery, oil, and fuel (if non-hydraulic) were not included in shipment. No hose fittings were included on hydraulic models. Please note that some assembly of your X3™ may be required before use to include the bobtach plates. .

Your machine may not have been shipped assembled with cutters and other accessories. Assembly may be required.

WARNING:

You must activate warranty at the back of this manual by faxing to 954.545.0348 before using.

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OPERATING INSTRUCTIONS

Warning

Carbon Monoxide Hazard!

Do Not operate gasoline powered equipment without adequate ventilation

Note: Return the Pre-Operation Inspection and Warranty Activation at the back of the book.

BEFORE START-UP, READ THIS…

Please read all operating instructions, including the provided engine manual, and be completely familiar with your equipment before operating. When in doubt, please contact SMITH Manufacturing for operation details.
This Owner's Manual will guide you through the removal process, from start to finish, and show you how to care for your machine. Hydraulic Systems must have adequate pressure and volume to operate correctly.

Remember: Only authorized, experienced and properly trained personnel should operate this equipment. Operating personnel should practice safety at all times and wear protective gear (gloves, goggles, safety vests, ear plugs, steel-toe shoes, etc.)

BEFORE YOU ATTACH TO SKID LOADER:

1. Complete pre-operational check and complete and return warranty card
2. Confirm skid-loader has proper mounting brackets to fit the supplied Bobtach plate. If not, obtain for your local ski loader supplier and replace plate on supplied with your X3 with the plate for your skid loader.
3. If you are going to front mount to a truck, contact SMITH for mounting instructions. The unit can also be mounted ot the side of your equipment as well.
4. Check the levelness of the 4 sets of caster wheels and the bobtach assembly. Add spacers to align , if required.
5. Make certain the machine is off the ground and/or cutters are off the ground before start-up
6. Get familiar with the engine, how to maintain and replace the drive belt and cutters

BEGINNING REMOVAL OPERATION:

Move your skid loader (vehicle) in the direction of removal before lowering the unit on the ground. It is recommended that to avoid damage to the cutters, that they be lowered gently to the road surface while moving forward/backwards. This will insure that you will achieve best finish (eliminate "crop-circle" appearance) and not damage the cutters.

IMPORTANT NOTE ON REMOVAL DEPTH

It is also recommended that the cutters be lowered to contact the road surface just enough to compete the removal process. Excess down pressure creates excess wear on all the moving parts. The unit weighs approximately 600 Lbs. This should be sufficient weight to hold the cutter heads against the work surface. Should the desired results not meet your expectations, consider resetting the engine speed (RPM's) to the correct speed or reducing forward motion speed to an acceptable level.

ENDING REMOVAL OPERATION:
Raise the unit above ground prior to stopping. The X3 "hard-stops" so make certain everyone is clear when shutting down.

X3/LNX8 REMOVAL HEAD ADJUSTMENT
Both the X3, X1 (patent pending) and the LNX8 machines utilize the same type rotary heads to remove traffic lines. The LNX8 and X1 is a single head unit and the X3 utilizes multiple (maximum of 3) heads to increase forward speed of line removal or width of removal. There are several options for removal heads depending on the road surface and type of paint\epoxy to be removed. Consult your Smith Manufacturing Rep for assistance on selection of the type head for your project.

The removal heads are as follows.

1. Tungsten Carbide Pin Cutters (72, 144 or 216 pin design)
2. Wire Brushes
3. Diamond Cup Wheel (specify concrete or asphalt – dry cut)
4. Tungsten Carbide Pick Head

Regardless of the type head chosen, correct head adjustment will ease removal and insure long life of the cutters. Excess pressure only increases wear on the removal heads, belt and bearings. High speeds and pressures yield short life cycles.

X3 Cutter Installation
The cutters are normally installed on the equipment at the factory. If you want to change the cutters with the spindle, do not remove the top plate, only remove the 3 socket head screws leaving the top plate for the new assembly.

1. Install the number of cutters (heads) desired (from one to three). More heads will result in more cutting. The multiple heads are set at the factory to within + or - .005" before shipping. Any shims required to obtain these tolerances are wired to the head to insure they arrive at your company already to install.
2. Install the heads with the attached shims on all three spindles using either a socket or wrench. The sizes are either 24MM or 15/16". We recommend an impact wrench if available.
3. Using the attached shims bolt the heads on the triangular driver hubs. Be sure the shims are set in the heads and all the rubber bushings and steel sleeve are included. The rubber bushings act as cushions on the heads.
4. After attaching all three heads, loosen the three lock nuts on the Acme elevation screws. They are located at both ends of the main frame on the X3. Two in the rear and one in the front.
5. Turn the elevation knobs up a turn or two to insure the heads don't hit.
6. The elevation knobs are graduated in 1/32-inch increments on the face of them for your reference in adjusting the unit.
7. Begin adjusting the heads downward and again using a piece of thick paper, adjust until the heads touch the paper evenly on the sides and front\rear of the cutters.
8. Next you may lower the unit about 1 line on the knobs to touch by a slight amount. Be sure to lower all three evenly to insure your cutters all lower evenly.
9. Raise the unit off the ground slightly (1/2" or so) to insure the cutters don't put grooves in the road surface when starting the engine. Allow the unit to warm up for a minute or two and then set to the correct RPM for the cutters you have installed. Incorrect setting of RPM will damage the cutters so be sure you are correct before proceeding.
10. After sufficient warm up time, begin forward motion and lower the unit at the same time. Remember if you stop the forward motion, the unit should be raised again to prevent road surface damage. If you can't elevate the unit initially to start the engine, you may put a couple of pieces of ¼" plywood or some other suitable shim under the wheels to raise the cutters off the ground. This way the unit can be started then as you roll off the wood you will begin erasing the line.

X3 WIDTH ADJUSTMENT FEATURE
The X3 unit is designed for maximum flexibility. It allows the unit to be swiveled either left or right to increase the cutting path width. This method of erasing requires finer adjustment of the eraser heads to insure they hit all the way across the work surface. You must always use the 4 caser wheels inboard when removing narrower widths and move them to the outside of the machine when removing in wider widths. When removing in wider widths, loosen the center swivel bolt at the end of the attachment arm and then loosen the outer two bolts. Swivel the unit either right or left to the desired angle and retighten the bolts. Follow all the same procedures as detailed on the preceding page and again lower and move forward at the same time. In this type scenario, you may wish to elevate the leading edge side of the cutters just slightly to increase erasing capacity.

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Tools required for maintenance and operation
Wrench Set., Socket Set. Large Adjustable wrench., Screw Drivers, Combination Wrench set., Set of Allen Wrenches (hex bits).

CUTTER PERFORMANCE VS SPEED
The X3 can be equipped with several style cutters. They all have a useful life span and we suggest that you do the following to get the most value for your investment. We always recommend the use of a dust collection system when using the X3

1. If at all possible, use water on the surface especially with diamond or carbide pic head products. Both will benefit greatly from the cooling affect water has on them (especially diamond products) and the flushing away of residue.
2. On carbide pic heads run at a maximum of 1500 to 1800engine RPM or slower if possible. A tachometer is installed to monitor this.
3. When adjusting the unit on the work surface do not force the unit down more that 1/32" to 1/16" after contact with the surface. More pressure does not result in increased performance but does accelerate wear on critical cutting surfaces.
4. Lock the three jam nuts on the elevation screws to prevent vibration creep.
5. Regularly examine the work surface to insure you are getting desired results.
6. Lift cutters off the work surface before starting and before shutting down.
7. Lower the unit gently onto the work surface while moving forward to prevent crop circle style grooving at the start and end of the cuts.
8. Sufficiently warm up the engine before starting the cutting action. This will insure the governor keeps the engine running when you apply the cutting load.

Use of Gas Powered Vacuum Dust Recovery System (for operator safety): Please note that the vacuum system, when attached, will normally help control dust. The do not pick up larger particles (gravel, stones etc). These may be swept up after the removal operation.

Important Safety Instructions

Caution

No person should attempt to operate this machine without first being trained. These instructions are not intended as a substitute for experience and training. Training will be offered by the seller at prevailing prices and are in addition to the price of the unit. The operator must observe all safeguards and local government safety regulations prior to use.

- Always wear safety glasses, steel toed shoes, work gloves, earplugs, respirator.
- Always check to be sure all fasteners and cutter assemblies are locked tight.
- Always disconnect spark plug before replacing cutters or performing maintenance on machine.
- Keep hands and feet clear of Cutter Assembly.
- Make certain the two Weights are fastened securely before operation.
- Repair any fuel leaks immediately (Hydraulic and Gas Models).
- Never operate machine with the unit off the ground in an unsafe position.
- Never let anyone near Cutting Assembly during operation.
- Never add fuel (Gasoline Models) while engine is running or HOT.
- Never start engine with cutters in down position.
- Never operate machine without Rubber Skirt.
- Never operate machine without Belt Cover.
- Do not operate in an explosive atmosphere, near combustible materials or where gas fumes may not be properly dispersed.
- Never come in contact with the muffler or engine when it is hot (Gasoline Powered Units), as it will cause severe burns.
- Never leave the machine running unattended.

WARNING
ROTATING HEADS
THROWN OBJECT HAZARD
To prevent serious injury or death:
• Do not raise machine within 10 feet of bystanders.
• Do not operate machine unless all guards are in place.
• Turn engine off and disconnect spark plug before servicing.
• Keep hands, feet, hair and clothing away from rotating heads.

Under no circumstances may this machine be modified from its original design without the permission of the manufacturer in writing. Non-authorized modifications can lead to serious injury or death.

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X3 REMOVAL HEAD OPTIONS

There are several options for removal heads depending on the road surface and type of paint/epoxy to be removed:

	Tungsten Carbide or Steel Pin Cutters (72 , 144, 216 pin design – set of 3)
	Diamond Puck Grinding Assembly
	Wire Brush Assembly
	Tungsten Carbide Pick Assembly

Consult your Smith Manufacturing Dealer for assistance on selection of the type head for your project.

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The X3™ (patent pending) machine utilizes multiple (maximum of 3) rotary heads to increase forward speed or width in removal of traffic lines or surface preparation. Regardless of the type head chosen, correct head installation and adjustment will ease removal and ensure long cutter life.
Excess pressure increases wear on the removal heads, belt and bearing, and yields short life cycles.

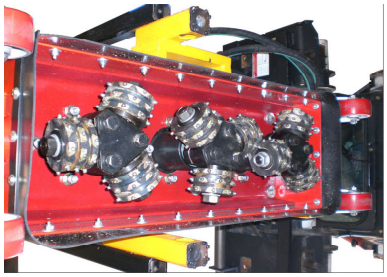
REMOVING THE CUTTER HEADS

- **Make sure both spark plug wires are disconnected before continuing.** Raise the X3 to a height where the cutters are easily accessible
- Remove the three Hex Head Bolts from one head and slide cutter head downward, off of shaft. Repeat for remaining cutter heads.

CAUTION: DO NOT DROP CUTTERS ON SURFACE
DOING SO WILL POSSIBLY DAMAGE PINS, BEARING AND BODY!

CUTTER HEAD INSTALLATION

- **Make sure both spark plug wires (Gasoline Models) or Hydraulic Supply (Hyd. Models) are disconnected before continuing (Gasoline Models).** Install the number of heads desired (from one to three) on the spindles using either a socket or wrench.
    - The sizes are either a 15/16" or 24MM Socket. We recommend an impact wrench if available. More heads will result in more cutting. The multiple heads are set at the factory to within ± .005" before shipping.
    - **NOTE: Cutter Heads will need to be adjusted in order to work properly, as outlined in the next step: "X3 Removal Head Adjustment".**



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X3 REMOVAL HEAD ADJUSTMENT

- Loosen the three lock nuts on the Acme Elevation screws, located at both ends of the main frame on the X3™, two in the rear and one in the front.
- Turn the elevation knobs up a turn or two to ensure the removal heads do not hit. The lines on the faces of the elevation knobs are graduated in 1/32" increments for your reference in adjusting the unit.
- Initial installment: Fold the rubber dust skirt upwards and tape it to the guard enclosure with some masking tape. This allows you to view the cutters when initially setting the height.
  (when first receiving your equipment, changing cutters, etc.)
- Begin adjusting the heads downward and, using a piece of thick paper, adjust until the heads touch the paper evenly on all sides of the cutters.
- Next you may lower the unit about 1 line on the knobs so that the cutters touch by a slight amount. Be sure to lower all cutter heads evenly.
- **Reconnect the two spark plug wires (Gasoline Models) or Hydraulic Supply Lines (Hyd. Models) before continuing.**
- Raise the X3™ off the ground slightly (½" or so) to ensure the cutters do not put grooves in the road surface when starting the engine. Allow the engine to warm up for a minute or two and then set to the correct RPM for the cutters you have installed (Rotary cutters = 2500-2800 RPM (engine)). Incorrect setting of RPM will damage cutters or drive belt so be sure it is correct before proceeding.
- After sufficient warm up time, begin forward motion and lower the X3™ at the same time. Remember: if you stop the forward motion, the unit should be raised again to prevent road surface damage. If you cannot elevate the unit initially to start the engine, you may put a couple of pieces of ¼" plywood or some other suitable shim under the wheels to raise the cutters off the ground. This way the unit can be started above the surface, then rolled off the wood to begin erasing the line.

SETTING DEPTH OF CUT

Lower cutters in a downward motion just enough to do the job. Too much pressure will wear the cutters out faster and leave a much more severe cut on the surface.
Ideally, you should add slightly more pressure to the rear cutters than the front. This will allow the front cutters to remove the material and the rear will finish the job.

MPORTANT NOTE: Excess down pressure creates excess wear on all the moving parts. The unit weighs approximately 600 Lbs. This should be sufficient weight to hold the cutter heads against the work surface. Should the desired results not meet your expectations, consider resetting the engine speed (RPM's) to the correct speed or reducing forward motion speed to an acceptable level.X3 WIDTH ADJUSTMENT FEATURE

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DEPTH ADJUSTMENT

- Loosen the three lock nuts on the Acme Elevation screws, located at both ends of the main frame on the X3™, two in the rear and one in the front.
- Turn the elevation knobs up a turn or two to ensure the removal heads do not hit. The lines on the faces of the elevation knobs are graduated in 1/32" increments for your reference in adjusting the unit.

- Fold the rubber dust skirt upwards and tape it to the guard enclosure with some masking tape. This allows you to view the cutters when initially setting the height. (when first receiving your equipment, changing cutters)
- Begin adjusting the heads downward and, using a piece of thick paper, adjust until the heads touch the paper evenly on all sides of the cutters.
- Next you may lower the unit about 1 line on the knobs so that the cutters touch by a slight amount. Be sure to lower all cutter heads evenly.
- Reconnect the Hydraulic Supply Lines
- Raise the X3™ off the ground slightly (½" or so) to ensure the cutters do not put grooves in the road surface. Allow the engine to warm up then set to the correct RPM for the cutters you have installed. Operating over the desired RPM's may damage cutters, bearings and other components.
  - **Carbide pin cutters: 2800 RPM**
  - **Steel pin cutters: 2800 RPM**
  - **Wire brush assembly: 500 RPM**
  - **Diamond blade assembly 800 RPM**
  - **Carbide Mini-picks 800 RPM**
  - **Carbide Large-picks 800 RPM**

- After sufficient warm up time, begin forward motion and lower the X3™ at the same time. NOTE: <u>if you stop the forward motion, the unit should be raised again</u>

to prevent road surface damage. If you cannot elevate the unit initially to start the engine, you may put a couple of pieces of ¼" plywood or some other suitable shim under the wheels to raise the cutters off the ground. This way the unit can be started above the surface, then rolled off the wood to begin erasing the line.

- Use of water with cutters will enhance service-life and operations.

RECOMMENDATION: To avoid damage to the cutters, that they be lowered gently to the road surface while moving forward/backwards. This will insure that you will achieve best finish (eliminate "crop-circle" appearance) and not damage the cutters.

WIDTH OF CUT SETTING

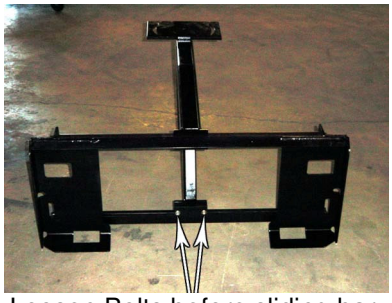
The X3™ allows the unit to be swiveled up to 30° either left or right to increase the cutting path width. Move the caster wheel assembly from inboard to outboard when removing at wider paths. Also:.

1. Loosen the center swivel bolt at the end of the attachment arm and then loosen the outer two bolts. Swivel the unit either right or left to the desired angle and retighten the bolts.

2. Adjust the heads as needed, as detailed under "**X3™ Removal Head Adjustment**". You may wish to elevate the leading edge side of the cutters just slightly to increase erasing capacity. Again, be sure to begin a forward motion with the unit while lowering at the same time for best removal finish.

MOUNTING PLATE SLIDE BAR OPERATION

The Bobtach frame assembly features a slide bar that allows the user to 'shift' the X3 to one side or another, providing flexibility in removal jobs.



Loosen Bolts before sliding bar.

To adjust the position of the slide bar:

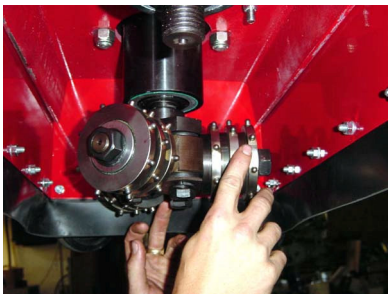
- Make sure the X3™ is lowered to the ground and the mounting plate securely fashioned to your equipment.
- Using a ¾" wrench, loosen the 2 bolts that hold the slide bar in place on the mounting plate.
- Once the bolts are loose, the X3™ can be rolled right or left. Adjust the X3™ to the desired position and retighten the 2 Slide Bar bolts
- .

****Lubricant can be added to the shaft to slide the bar easier.**

CHANGING DRIVE BEARINGS

Estimated Time: 3 hours
Tools Required: 13/16 wrench, 7/8, 15/16" socket wrenches, a set of Allen wrenches.
Manpower:

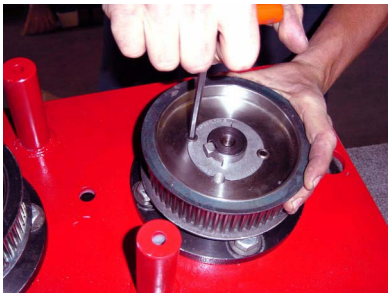
Make sure both spark plug wires or hydraulic supply lines are disconnected before continuing. Raise the X3 off the ground about 12 to 24 inches to ease access to cutters and bearing housing.



Remove the three Hex Bolts from one spindle assembly w/cutters and set aside on work bench.
Repeat for remaining cutter heads, as needed.

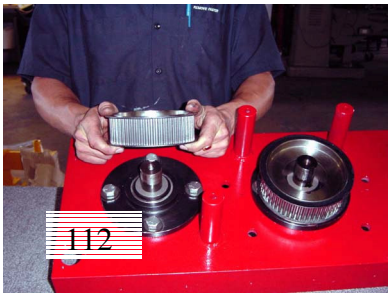
To remove the belt:

- Disconnect battery cables (P/N's: X3.00.052 & X3.00.053)
- Unbolt voltage regulator from side of outer frame
- Disconnect gas line
- Disconnect throttle lever from lifting arm
- Using a 9/16" deep socket, loosen the 4 nuts under the main unit. These are at the ends of the 3/8 carriage bolts fixing the motor plate in place. Now loosen the two 3/8-16 jam nuts on the adjusting screws for the motor plate tensioners.
- Remove auxiliary belt cover (P/N: X3.00.029)
- Simultaneously lift and cock engine slightly so that the belt can be slid free from the pulley.



Remove the pulley for the appropriate drive bearing:

- Using elevation knobs, move the inner frame up or down as needed to access and remove the belt cover's ¼-20 button head screws (two on one side, seven on the other).
- Lower inner frame all the way down
- Lift belt cover from unit and set aside
- Locate two set screws on pulley hub and remove
- Place one of the set screws back into the pulley, in CENTER hole, not the original hole from which it was removed.
- Tighten this screw to separate the taper-lock hub and pulley slightly.
- Slide the pulley and hub off of the shaft.



Bolts for drive bearing should now be visible.
Each sealed bearing is held in place by 4 (9/16") Bolts and 4 Lock nuts. Remove these and the bearing housing will slide out through the top of the Inner Frame.

To reinstall, reverse all steps.

MAINTENANCE SCHEDULE

DAILY	WEEKLY	EVERY 16 HOURS OF OPERATION	EVERY 50 HOURS OF OPERATION
Clean air filter (Gas Models)	Clean caster wheels	Check cutter bearings	Check Springs
Oil Felt Seals	Grease slide-bar	Check Drive bearings	Check Meters
Clean dirt from equipment	Inspect Guards	Check Rubber Bushings	Order Spare Parts
If machine will not be used for an extended period of time, drain gasoline. Perform winterize maintenance of engine (see engine manual).			

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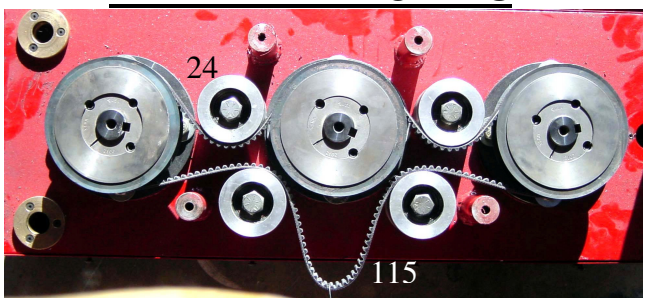
DRIVE BELT MODELS



The X3 is equipped with a multi groove (banded) "V" belt in a serpentine arrangement. This allows all three heads to turn in the same direction to minimize parts inventory of heads and drive components. In the event a belt needs replacement, we have detailed the procedure for you. Pages follow for the Hydraulic Motor Removal. Procedure is common to both engines.

1. **Disconnect the Hydraulic Supply or shut off Pump!**

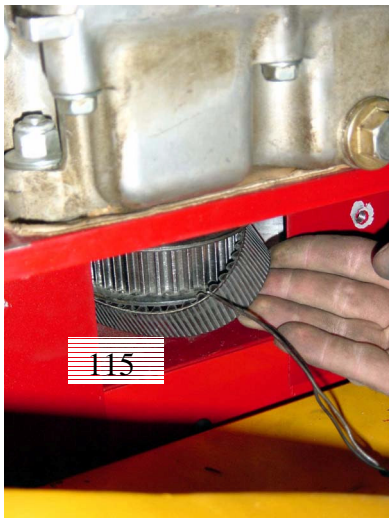
2. Raise the cutter heads off the ground by turning the 3 level adjusters all the way up. Loosen the lock nuts and raise the three elevating screws all the way up. This allows access to the button head screws holding the upper and lower covers on.

3. Remove the auxiliary belt cover over the hydraulic motor pulley.

4. Remove the belt cover screws. Remove the 4 hex nuts holding the motor plate down.

5. Using a 9/16" wrench, remove the two 3/8-16 bolts holding the hydraulic motor to the motor plate. Pry the motor up and set aside. Note there is a woodruff key on the shaft. This is the drive key and must be kept. Now remove the two 3/8-16 Socket Head Cap Screws holding the pulley housing to the underside of the motor plate.

6. Lift the motor plate up and remove it . Remove the set screws in the drive pulley and put one screw in the tapped hole between the original holes and tighten the setscrew to break apart the tapered hub. Now slide the center shaft up and out of the unit to remove the pulley from the housing.



7. Remove the old belt and slide the new one around the three pulleys and four idlers.
8. Place the belt and pulley inside the support bearing housing and slide the center shaft with keys into the pulley. Place the setscrews in the two tapped holes opposite each other. Replace the motor plate loosely. Set the pulley height and tighten the pulley set screws alternating between them to insure tightness

9. Reinstall all the cover screws as well as the motor plate nuts from the underside. Do not tighten the nuts at this point. Replace the motor and bolt down.

10. Using the tension screws (if so equipped) begin to tighten the belt by moving the motor away from the center of the unit. If not equipped with these adjusters, use a piece of wood to pry the motor plate against the outer frame to tension the belt. In the event tension screws are not present, pry the motor plate away from the main frame using a piece of wood (to prevent paint damage) and secure when tensioned.

11. After installing the belt very tightly, reconnect the hydraulic supply and rotate the spindles 15 to 20 revolutions to allow the belt to set into the grooves of all four pulleys correctly. It is better to tension the belt tightly rather than loosely.
12. Reattach all the covers and the unit will be ready for operation. Periodic tensioning of the belt will ensure long belt life.

Recheck belt tension again after 30 minutes of use.

CHANGING DRIVE BEARINGS

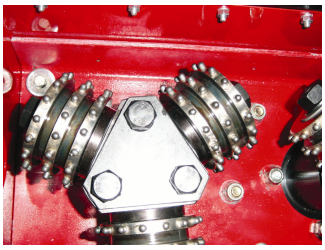
To remove the drive bearing assemblies follow the first procedure to remove the entire drive assembly. This gives you access to the bearing assemblies. Note that the assemblies are matched in sets. The machine SN and the established length are stamped on the housing. This insures all three heads hit the working surface at the same time.

ORDERING INSTRUCTIONS

MATCH SERIAL NUMBERS
TO ASSURE CORRECT PART!

If ordering a new bearing assemblies, please be sure you when ordering. identify the machine serial number. We will send the correct part and dimension to insure you machine is fitted with a matching housing.

After removing the hydraulic drive components,



1. the inner frame with the bearing cartridges will be exposed.
2. Tip the machine (or raise it) to access the cutting heads.
3. Remove the three bolts attaching the cutting head assembly to the bearing cartridge.
4. Using a socket set and wrench, remove the four 9/16" bolts attaching the cartridge to the inner frame.
5. Lift the bearing assembly out from the frame. The hole in the frame is large enough to remove the cartridge with the hub connector (triangular plate) attached to the end of the spindle.
6. Remove the *drive coupling lower half* from the *upper end of the spindle* by loosening the set-screw. Remove the key for re-use on the new bearing assembly.

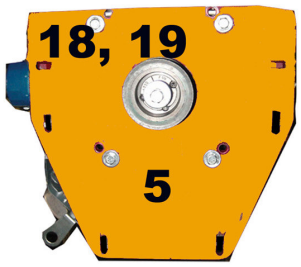
Reverse the procedure to reassemble the unit. The new or rebuilt cartridge will match the old length and the hub connector plate will be secured on the shaft.

See the preceding pages for alignment procedures as the centerline of the new spindle will be slightly different that the original one and will need realignment to insure the centerlines match.

SMITH Manufacturing Company
a div. of SSPS, Inc.
(800)-653-9311
1610 S Dixie Highway, Pompano Beach, FL 33060 Ph: (954) 941-9744 Fx: (954) 545-0348 WWW.SMITHMFG.COM

X3™ USER'S MANUAL

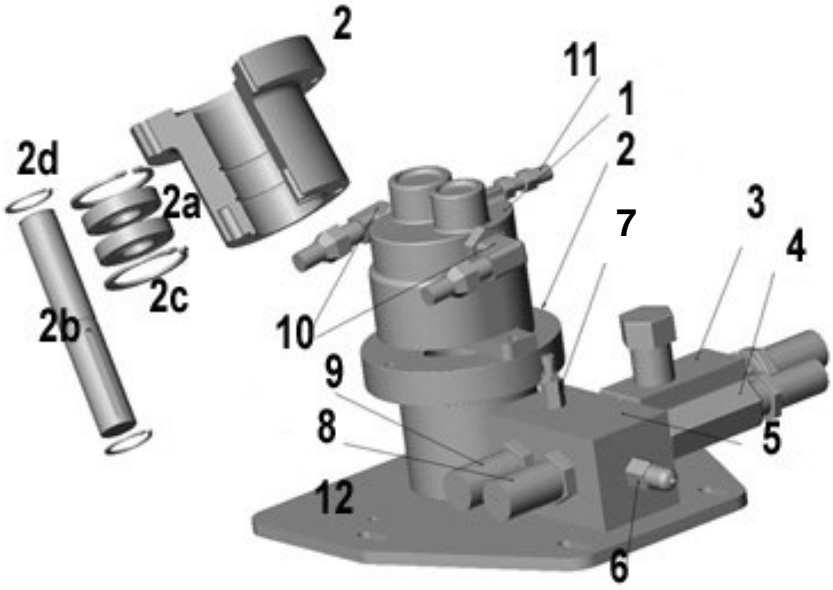
GAS ENGINE MOUNT ASSEMBLY

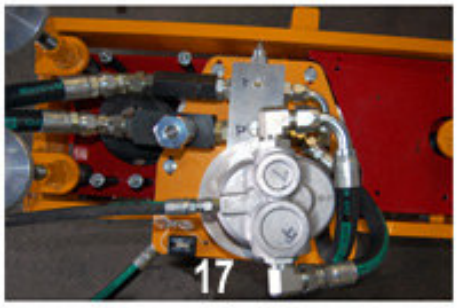


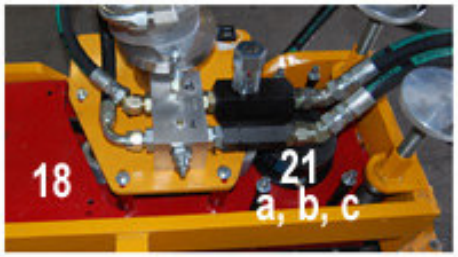
Item	P/N	Qty	Description	Item	P/N	Qty	Description
1	RS-32340-ZJ1-842	1	Control Box	11	X3.00.239.1	1	Fuel Line (41"L)
2	X3.00.050	1	Battery Box	12	X3.00.065	1	3 Gal. Gas Tank
3	X3.00.073	1	Battery Box Mount Plate	13	X3.00.050.2	1	Web, Strap (4 ft)
4	RS-32349-ZJ1-840	1	Control Box Bracket	14	X3.00.050.1	2	Strap Locks
5	X3.00.030	1	Motor Mount Plate	15	1068055	1	Tachometer
6	X3.00.270	1	Ground Battery Cable	16	RS-31620-ZG5-013	1	Voltage Regulator
7	X3.00.269	1	Positive Battery Cable	17	RS-32105-ZJ1-800	1	Wiring Harness
8	RS-VVSM3	1	Muffler, Kit	18	X3.00.227	2	3/8-16 X 3-1/2" Socket Set Screw
9	RS-06184-ZJ1-800	1	Deflector	19	10404	2	3/8-16 Hex Nut
10	X3.00.239	2	1/4" Hose Barb	20	RS-E-626800	1	24HP Honda GXV670TAF

Hydraulic Motor Mount assembly

CAUTION: MAXIMUM RPM – 2950
(Warranty is void if hydraulic motor runs over 3000)







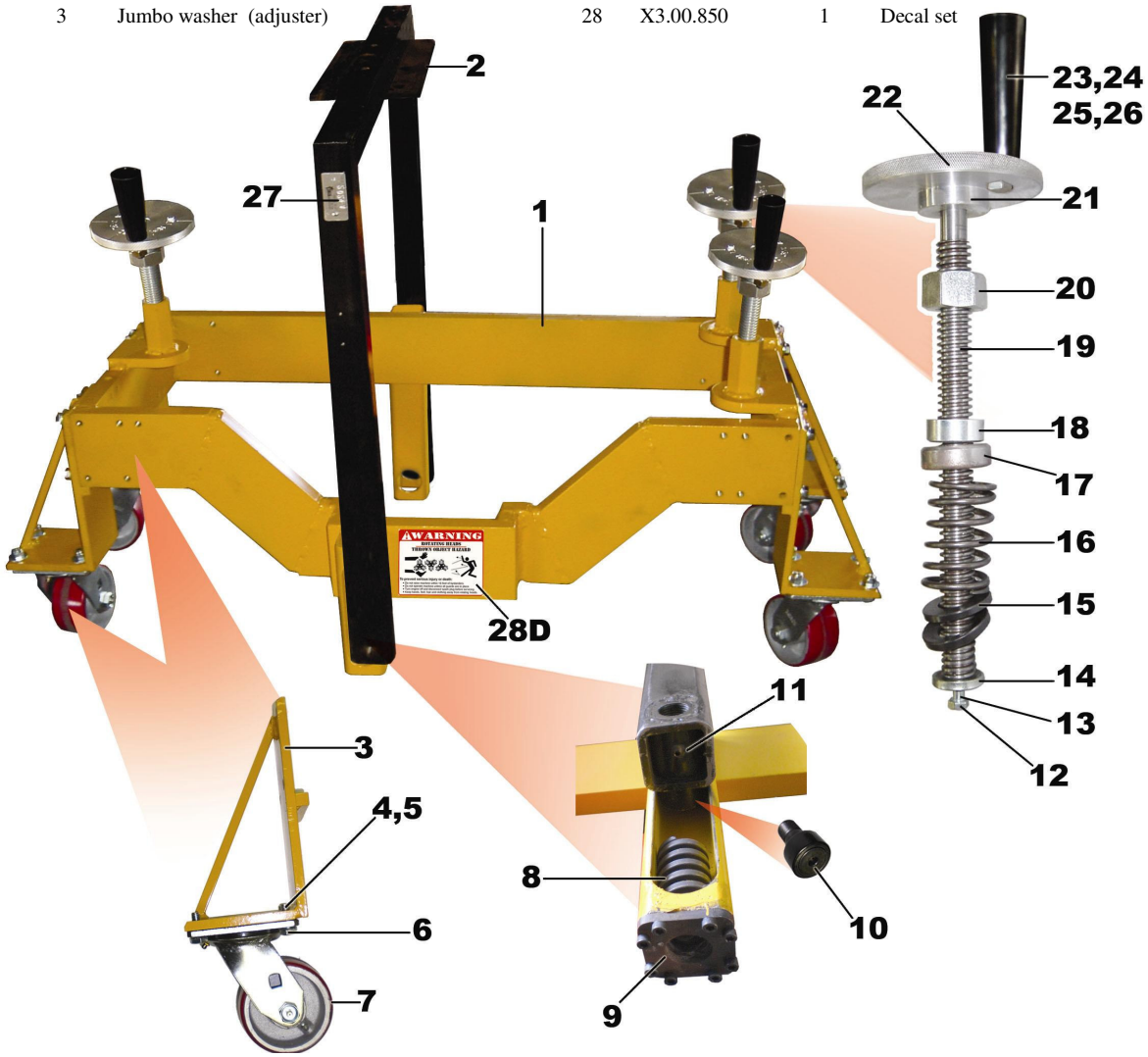
Item	P/N	Qty	Description
1	X3.00.500	1	Hydraulic Motor (3,000 RPM max)
2	X3.00.310	1	Motor Mount Bearing Housing Assembly
2a	X3.00.245	2	5207 Bearing
2b	X3.00.521	1	Pulley Drive Shaft
2c	X3.00.524	2	2-3/4 snap ring, int for X3.00.310
2d	X3.00.526	2	1-3/8 snap ring, ext for X3.00.310
3	X3.00.503	1	Flow Control Valve
4	X3.00.504	1	Check Valve
5	X3.00.502	1	Manifold
6	X3.00.501	1	Relief Valve
7	X3.00.256.2	1	Diagnostic Port
8	X3.00.515	1	Hose Assembly 22.5"
9	X3.00.513	1	Hose Assembly 15"
10	X3.00.508	2	90º Adapter Fitting

Item	P/N	Qty	Description
11	X3.00.514	1	Case Drain Hose Assembly 9.5'
12	X3.00.030	1	Motor Mount Plate
13	X3.00.522	1	Hydraulic Motor Sheave (pulley)
14	X3.00.523	1	Bushing for pulley
15	X3.00.525	1	Key for pulley
16	X3.00.255.1	1	Magnet for tach
17	X3.00.255	1	Tachometer, suface mount
18	X3.00.028.L	1	Belt Guard Cover left
19	X3.00.028.R	1	Belt Guard Cover right
20	X3.00.520	1	Belt Guard Inspection Plate
21	X3.00.031	8	Belt Guard Spacer tube mount
21a	110025	8	3/8 flat washer for X3.00.031
21b	110811	8	3/8 lock washer for X3.00.031
21c	X3.00.032	8	3/8-16 Hex Screw for X3.00.031

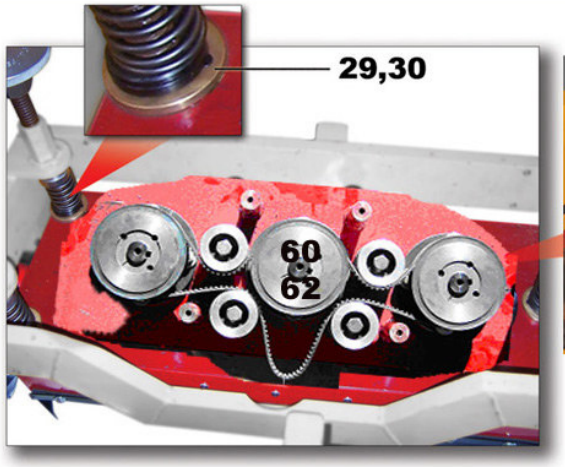
OUTER FRAME ASSEMBLY

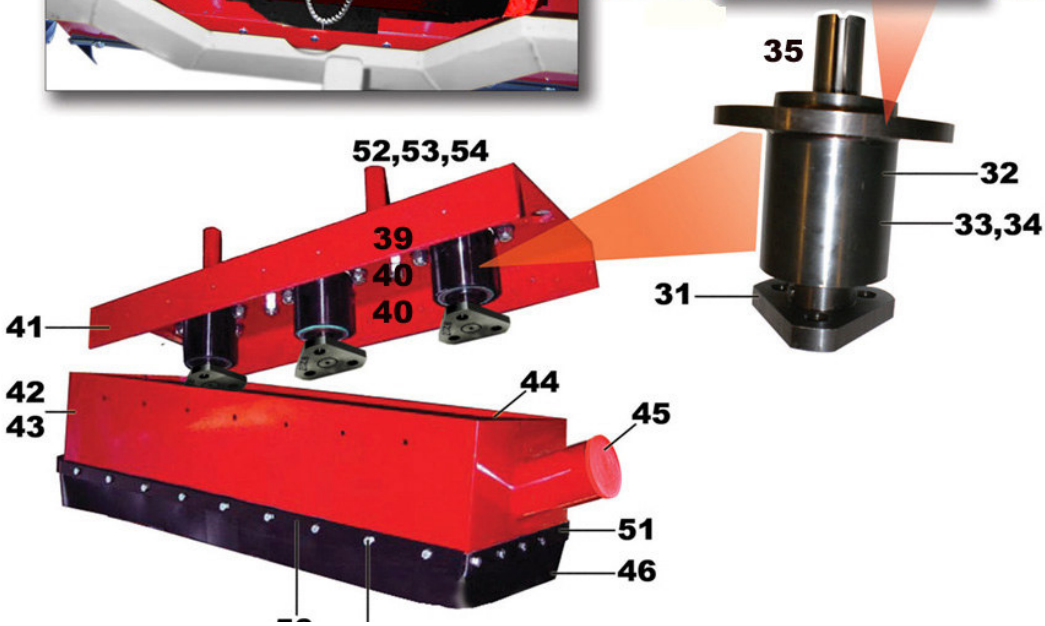
Ill #	P/N	Qty	Description
1	X3.00.001.3	1	Outer Frame Weldment with couplings
2	X3.00.004	1	"U" attachment mount
3	X3.00.005	4	Caster mounts
4	110308	16	3/8-16 x 1-1/4" bolt (caster)
5	110025	32	3/8" washer (caster)
6	990.1001.10	16	3/8-16 lock nut (caster)
7	X3.00.200	4	4" steel swivel caster
8	X3.00.014A	2	"U" mount end spring cushion assembly
9	X3.00.265	16	10-32 X 3/4" SH cap screw (cushion spring)
10	X3.00.222	2	Cam roller
11	X3.00.226	2	1/4-28 X1/4" set screw (cam roller)
12	10021	1	3/8-24 x 1" Bolt (adjuster)
13	110811	1	3/8" lock washer (adjuster)
14	X3.00.201	3	Jumbo washer (adjuster)

Ill #	P/N	Qty	Description
15	X3.00.024	6	Spherical washer (adjuster)
16	X3.00.236	3	Compression spring (adjuster)
17	X3.00.025	3	Thrust bearing (adjuster)
18	X3.00.020	3	Spring-stop c/w 1/4-20 set screw (adjuster)
19	X3.00.015	3	Depth-adjusting Screw (adjuster)
20	X3.00.019	3	Jam Nut (adjuster)
21	X3.00.237	3	1/4-20 X1/2" set screw (adjuster)
22	X3.00.016	3	Depth-adjustment knob (adjuster)
23	X3.00.016	3	extention arm (adjuster)
24	110346	3	1/2"-13 X 4" SH screw (ext. arm)
25	110407	3	1/2"-13 lock nut (ext. arm)
26	10420	3	1/2" lock washer (ext. arm)
27	80001	1	Serial plate, c/w two - #6 drive screw
28	X3.00.850	1	Decal set



INNER FRAME AND DRIVE ASSEMBLY





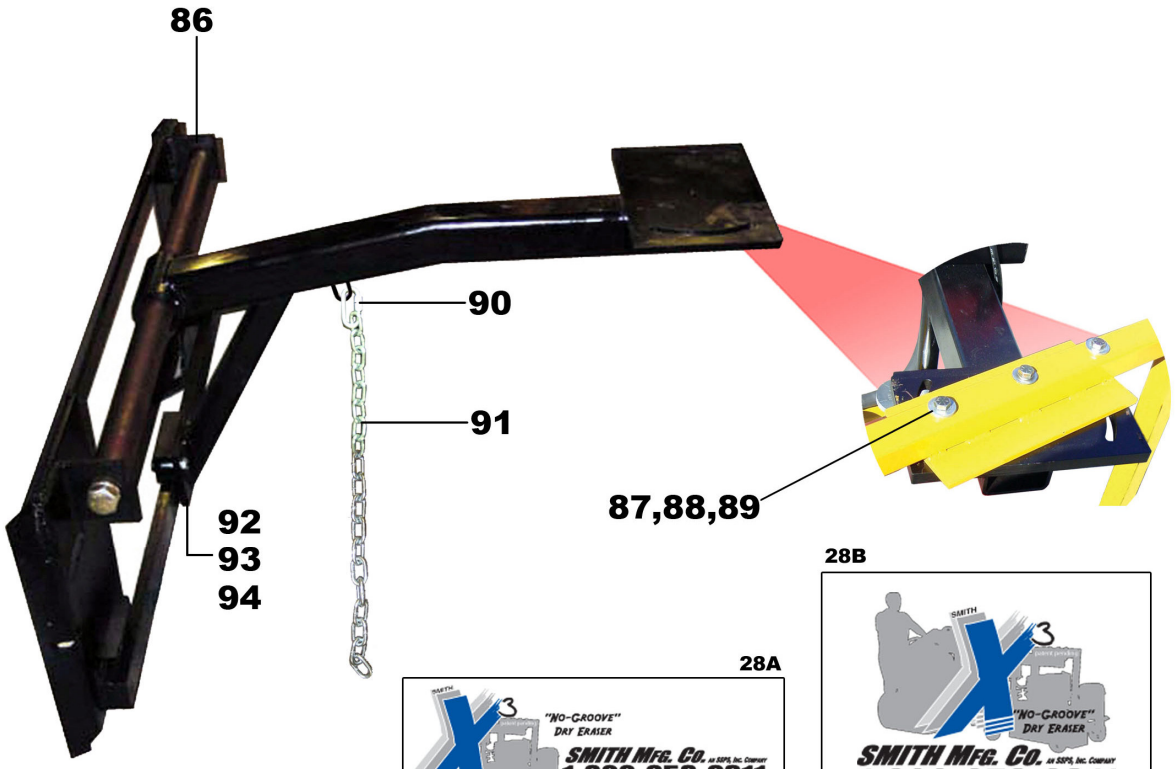
Ill #	P/N	Qty	Description
29	X3.00.018	3	Bronze bushing
30	X3.00.264	12	10/32 - 3/8" BH screw (bushing)
31	168039	3	Hub Connector c/w set screw
32	PM182994A	3	Sealed Bearing Assembly w/ drive shaft
33	X3.00.245	1	Sealed bearing 6307 (double row)
34	X3.00.246	1	Sealed Bearing 5307 (double row)
35	PM182995K	1	8mm X 10mm Key (bearing assembly drive shaft)
36	X3.00.021	4	Belt Idlers
37	X3.00.022	4	Idler Roller Spacers
38	X3.00.223	8	303PP Bearing, idler
39	X3.00.212	12	9/16-12 x 1-3/4" hex cap screw (bearing housing)
40	1012230	12	9/16" hardened spacer
41	X3.00.002.2	1	Inner Frame weldment (after SN2024)
59	X3.00.232	4	5/8-11X4" hex cap screw
60	X3.00.220.1	3	Drive Bushing, (for pulley)
61	X3.00.219.1	1	Engine Pulley
62	X3.00.218.1	3	Drive Pulley

Ill #	P/N	Qty	Description
42	X3.00.224	14	1/4-20 X 1/2" BH screw (cutter guard / inner frame)
43	110038	14	1/4" lock washer (cutter guard / inner frame)
44	X3.00.006	1	Cutter Guard Housing
45	164030	2	Vacuum cap, 3"
46	X3.00.059	1	Rubber Skirt
47	10871	28	1/4-20 X 1" hex bolt (skirt)
48	110602	56	1/4" flat washer (skirt)
49	10861	28	1/4" lock nut (skirt)
50	X3.00.007-1	2	Small rubber hold down strips, ends
51	X3.00.007-2	2	Large rubber hold down strips, sides
52	168035.1	4	3/8-16 x 1-1/2" Hex bolt (engine mount plate)
53	110025	4	3/8" Flat washer (engine mount plate)
54	110811	4	3/8" Lock washer (engine mount plate)
55	X3.00.209.1	1	Drive Belt, 4/3VX710
56	X3.00.221.1	1	Drive Bushing, (for engine pulley)
57	X3.00.028	1	Belt Cover
58	X3.00.029	1	Belt cover, auxillary

40 X3.00.213 12 9/16-12 locknut

BOBTACH MOUNT ASSEMBLY

Ill #	P/N	Qty	Description
86	X3.MTBC	1	BobTach Mount Assembly
87	110346	3	1/2"-13 X 4" hex bolt (swivel plate)
88	10312	6	1/2" washer (swivel plate)
89	110407	3	1/2-13 Nylok nut (swivel plate)
90	X3.00.230	1	Quick link
91	X3.00.236	1	Chain. 36"
92	1066016	2	1/2" -20 X 2-1/2" hex bolt (slidebar)
93	1010205	2	1/2"-20 Nylok hex nut (slidebar)
94	10312	2	1/2" flat washers (slidebar)



28A

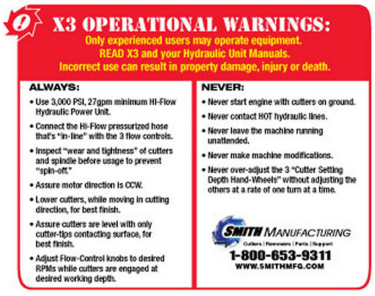
28B

28C

28D

WARNING
ROTATING HEADS
THROWN OBJECT HAZARD
To prevent serious injury or death:
• Do not raise machine within 10 feet of bystanders.
• Do not operate machine unless all guards are in place.
• Turn engine off and disconnect spark plug before servicing.
• Keep hands, feet, hair and clothing away from rotating heads.

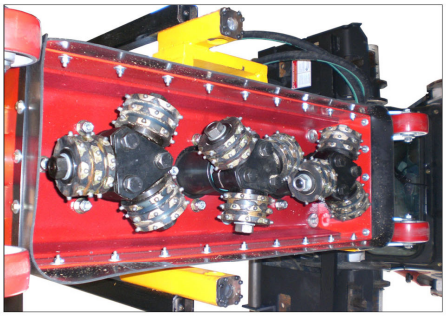
28E

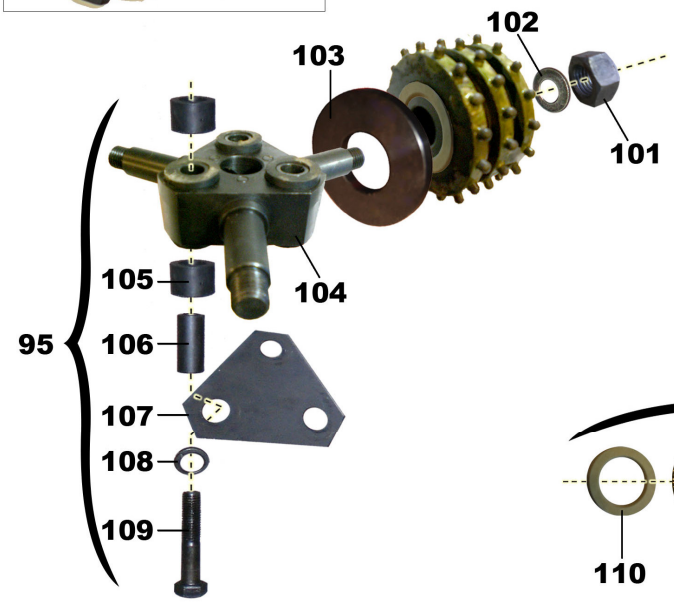

X3 OPERATIONAL WARNINGS:
Only experienced users may operate equipment.
READ X3 and your Hydraulic Unit Manuals.
Incorrect use can result in property damage, injury or death.
ALWAYS:
• Use 3,000 PSI, 27gpm minimum Hi-Flow Hydraulic Power Unit.
• Connect the Hi-Flow pressurized hose that's "in-line" with the 3 flow controls.
• Inspect "wear and tightness" of cutters and spindle before usage to prevent "spin-off."
• Assure motor direction is CCW.
• Lower cutters, while moving in cutting direction, for best finish.
• Assure cutters are level with only cutter-tips contacting surface, for best finish.
• Adjust Flow-Control knobs to desired RPMs while cutters are engaged at desired working depth.
NEVER:
• Never start engine with cutters on ground.
• Never contact HOT hydraulic lines.
• Never leave the machine running unattended.
• Never make machine modifications.
• Never over-adjust the 3 "Cutter Setting Depth Hand-Wheels" without adjusting the others at a rate of one turn at a time.
SMITH MANUFACTURING
1-800-653-9311
WWW.SMITHMFG.COM

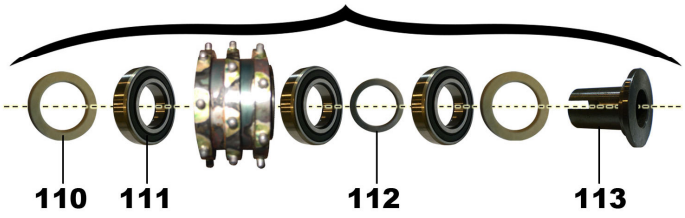
X3 REMOVAL TOOLS, ROTARY CUTTER & SPINDLE ASSEMBLY

- 24 PIN STYLE CARBIDE CUTTERS (PM3000) - THERMOPLASTIC REMOVAL
- 48 PIN STYLE CARBIDE CUTTERS (PM3001) - PAINT REMOVAL
- 72 PIN STYLE CARBIDE CUTTERS (PM3002) - BEST FINISH - CONCRETE

Ill #	P/N	Qty	Description
95	169068	1	spindle assembly, no cutters
96	169068.PM3000A	1	Spindle assembly with with set of 3, PM3000 cutters
97	169068.PM3001A	1	Spindle assembly with set of 3, PM3001 cutters
98	PM3001A	3	Set of 3- 48 Carbide Pin Cutter
99	PM3000A	3	Set of 3- 24 Carbide Pin Cutter
100	PM3002A	3	Set of 3, 72 Carbide Pin Cutter
101	110446	3	Nut, L.H.
102	110443	3	Belleville Washer
103	169015	3	Backing Plate
104	168012	3	Hub, Rotary Head with 3 shafts
105	169001	6	Bushing, Rubber
106	169018	3	Sleeve, Metal
107	168013	3	Flange, Rotary Cutter Head Base
108	110444	3	Lock Washer
109	110370	3	Hex Bolt (Metric)
110	169006	2	Seal, Felt (per cutter)
111	169004	3	Bearing, Ball Radial (per cutter)
112	169017	1	Spacer (per cutter)
113	169016	1	Internal Sleeve (per cutter)



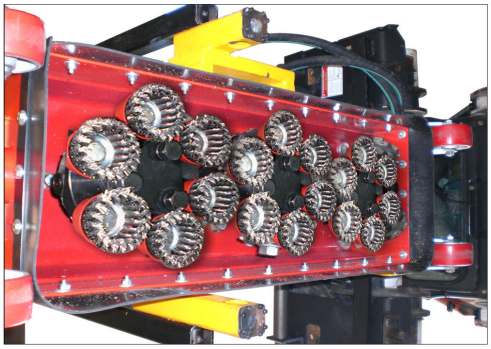


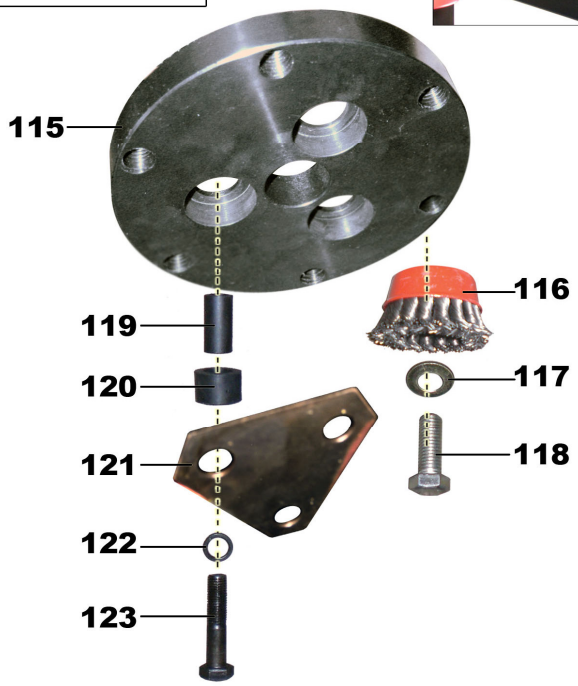


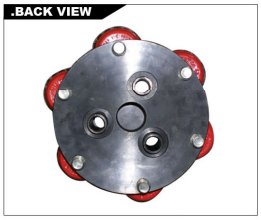
X3 REMOVAL TOOLS, WIRE BRUSH DISC ASSEMBLY
CURING COMPOUND AND LIGHT REMOVAL

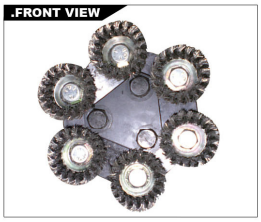
26

Ill #	P/N	Qty	Description	Ill #	P/N	Qty	Description
114	X3.00.101A	3	Wire Brush Mount Disc Assembly	119	169018	3	Sleeve, Metal
115	X3.00.100	3	Wire Brush Mount Disc only	120	169001	6	Bushing, Rubber
116	X3.00.101	18	Cup Style Wire Brushes	121	168013	1	Flange Rotary head base
117	10073	6	5/8" Structural Washer	122	110444	9	Lock Washer
118	X3.00.103	6	5/8-11 x 1-1/2" hex mount bolt	123	110370	3	Screw Cap









X3 WEAR PARTS KIT

It is always recommended to keep a wear parts kit in stock with an extra set of carbide cutters. Always use genuine Smith replacement parts to maintain warranty and safety

P/N: X3.G.WPK

X3.00.209.1	1	Banded "V" Belt 4/3VX710 (after SN#2009)
X3.00.228	1	Air Filter (24 HP Honda GAS only)
PM0301000	1	Drive Bearing Assembly
X3.00.059	1	Rubber Skirt
X3.00.200	4	swivel caster wheels

AVAILABLE OPTIONS

VACUUM OPTION

An optional, trailered, gas-powered vacuum system is available for use with this machine. It hitches to the front of the unit with the intake hose connecting to the 3" vacuum port. This vacuum system will contain removed airborne particles and powders from the job site during removal operations. Operating instructions are offered in the vacuum manual.

ORDERING

To assure product safety and reliability, always use genuine replacement parts and genuine SMITH 24 or 48 pin tungsten carbide cutters on this machine.

When ordering, please specify, as listed in the Parts List:

- Part Number
- Quantity
- Description

For Best Pricing and Genuine Replacement Parts, please contact your local SMITH Dealer, or SMITH directly.

Maintenance Log

WARRANTY CLAIMS

The manufacturer reserves the right to change or improve the machine design without assuming any obligation to update any products previously manufactured before this manual. It is the customer's responsibility to complete the Pre-Operation Inspection and Warranty Activation and mail it to the seller (certified letter) within 10 days from the date of purchase to activate warranty. If not, then warranty is invalid. If a failure occurs during the warranty period, the customer must contact the seller to determine the appropriate action. Any and all transportation charges are to be borne by the purchaser.

X3

Limited Equipment Warranty

All statements, technical information and recommendations contained in SMITH's literature are based on tests believed to be reliable, but the accuracy or completeness thereof is not guaranteed and the following is made in lieu of all warranties, expressed or implied. SMITH warrants all equipment or part referenced in this document which is manufactured by SMITH and bearing its name to be free from defects in material and workmanship on the date of sale to the original purchaser under normal use and maintenance as herein provided. This warranty does not apply to components manufactured by others such as, but not limited to, bearings and engines; such components that may or may not have their own warranties.

With the exception of any special, extended, or limited warranty published by SMITH, SMITH will, for a period of three months (90 days) from the date of sale or up to five hundred (500) hours of use by buyer, whichever shall occur first; repair or replace any part of the equipment determined by SMITH to be defective. This warranty applies only when the equipment or part is installed, operated and maintained in accordance with SMITH's written recommendations.

SMITH's sole obligation for any breach of warranty or breach of contract for defects, deliberate or accidental omissions, shall be limited to repairing, replacing or allowing credit for, at SMITH's option, any part which, under normal and proper use and maintenance, proves defective in material or workmanship within warranty period, provided, however, that notice of any such defect or omission and satisfactory proof thereof is promptly given by buyer to SMITH, and thereafter, such defective part is returned to SMITH with transportation charges prepaid, and SMITH's examination proves such part to have been defective. This warranty does not obligate SMITH to bear any transportation charges or personnel time in connection with the replacement or repair of defective parts. This warranty does not obligate SMITH to bear any expense for travel time or of personnel in connection with any service calls. SMITH will not, in any event, be liable to the user for any consequential damages arising out of this sale for the loss of use, lost profits or revenue, interest, lost goodwill or work stoppage. SMITH shall not be liable for any injury, loss or damage, direct or consequential, arising out of the use or the inability to use the product or for environmental claims. It being understood that SMITH has no means of controlling the products final use; therefore, it shall be buyer's responsibility to determine suitability of product for intended use and buyer assumes all risks and liabilities whatsoever, in connection therewith. In no event shall SMITH be liable for consequential or special damages. Used products are sold on an "as is" basis, and there is no implied warranty of merchantability or of fitness for a particular purpose, unless made in writing by an officer at SMITH's office.

This warranty does not cover, and SMITH shall not be liable for general wear and tear, or any malfunction, damage or wear caused by faulty installation, misapplication, abrasion, corrosion, inadequate or improper maintenance, negligence, accident, tampering, or substitution of non-SMITH component parts. Nor shall SMITH be liable for malfunction, damage or wear caused by the incompatibility of SMITH equipment with structures, accessories, equipment or materials not supplied by SMITH, or the improper design, manufacture, installation, operation or maintenance of structures, accessories, equipment or materials not supplied by SMITH. This warranty does not apply in respect to damages to any product or accessory or attachment thereof caused by overloading or other misuse, neglect or accident, nor does this warranty apply to any product or accessory or attachment thereof, which has been repaired or altered in any way which, in the sole judgment of SMITH, affects the performance, stability or general purpose for which it was manufactured. In the manufacture of buyer's equipment, parts may be omitted or equivalent functioning equipment and components may be substituted for the original specified equipment upon the sole judgment and discretion of SMITH.

This warranty is conditioned upon the prepaid return of the equipment claimed to be defective to an authorized SMITH Reseller for verification of the claimed defect. If the claimed defect is verified, SMITH will repair or replace free of charge any defective parts and return of merchandise back to the customer freight collect. If inspection of the equipment does not disclose any defect in material or workmanship, repairs will be made at a reasonable charge, which charges may include the costs of parts, labor and transportation.

THIS WARRANTY IS EXCLUSIVE AND IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTY OF MERCHANTABILITY OR WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE.

SMITH's sole obligation and buyer's sole remedy for any breach of warranty shall be as set forth above. The buyer agrees that no other remedy (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available. Any action for breach of warranty must be brought within two (2) years of the date of sale.

SMITH MAKES NO WARRANTY, AND DISCLAIMS ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, IN CONNECTION WITH ACCESSORIES, EQUIPMENT, MATERIALS OR COMPONENTS SOLD BUT NOT MANUFACTURED BY SMITH.

These items sold, but not manufactured by SMITH (such as electric motors, switches, hose, etc.), are subject to the warranty, if any, of their manufacturer. SMITH will provide purchaser with reasonable assistance in making any claim for breach of these warranties. In no event will SMITH be liable for indirect, incidental, special or consequential damages resulting from SMITH supplying equipment hereunder, or the furnishing, performance, or use of any products or other goods sold hereto, whether due to a breach of contract, breach of warranty, the negligence of SMITH, or otherwise.

ADDITIONAL WARRANTY COVERAGE - SMITH does provide extended warranty and wear warranty for products.

Corrections - typographical or clerical errors contained herein are subject to correction by SMITH.

Assignment - buyer shall not assign or transfer this warranty without SMITH's written consent.

Entire agreement and applicable law - the rights and obligations of SMITH and buyer shall be governed by the laws of the state of Florida, U.S.A. In force on date hereof. The provisions hereof are intended by buyer and SMITH as a final expression of their agreement, and are intended also, as a complete and exclusive statement of all terms apply cable to buyer's order. No waiver, modification, or addition to any of the terms hereof shall be binding on SMITH, unless made in writing by an officer at SMITH's office as stated herein. In the event of conflict between buyer's purchase order and the terms hereof, the latter shall control. If any provisions herein are to any extent invalid or unenforceable, the remainder of the warranty shall not be effected thereby and shall be valid and enforceable to the fullest extent permitted by law.

Legal action - buyer shall be responsible for all costs of collection of outstanding indebtedness, including but not limited to attorney's fees and court costs to seller. Buyer shall reimburse seller for any and all litigation expenses seller incurs as a result of an unsuccessful buyer claim. The jurisdiction and venue of the court for any litigation, state or federal, brought by the buyer and/or seller shall be located in venue determined by seller.

Fair labor standards - seller's products are produced in the United States and in conformity with all applicable provisions of the fair labor standards act of 1938 as amended and any regulations and orders of the United States Department of Labor issued thereunder.

All written and visual data contained in this document reflects the most current product information available at the time of this publication. SMITH reserves the right to make changes at any time without notice.

TO ORDER, contact your SMITH distributor or call 1-800-653-9311 to identify the nearest distributor.

SMITH Manufacturing Co, Inc.
1610 South Dixie Highway
Pompano Beach, FL 33060
www.smithmfg.com

X3

PRE-OPERATION INSPECTION - WARRANTY ACTIVATION
PRODUCT REGISTRATION

Thank you for purchasing a SMITH. Please complete this form upon receipt of your equipment and prior to use on the job. A pre-operation inspection is required to activate your warranty. All sections must be completed. Should you have any questions, please add to the comments section below. Fax completed form to (954) 545-0348.

Organization _____

First Name _____ Last Name: _____

Job Function (Title) _____

Phone: _____ Email: _____

Address _____

City _____ State _____ Zip _____

SMITH Product **X3** _____ Machine Serial # _____

Date of Purchase (MM / DD / YYYY) _____ Purchased from _____

PRE-OPERATION INSPECTION (PLEASE CHECK ALL)

1. No parts or components on the machine appear damaged or lost in shipment. ☐ Yes ☐ No
2. All bolts and fasteners are in place and tightly secured. ☐ Yes ☐ No
3. Grease points have been identified for future maintenance requirements and appear lubricated. ☐ Yes ☐ No
4. Wheels are operational. ☐ Yes ☐ No
5. Motor has been started and in good working condition. ☐ Yes ☐ No
6. All Decals appear in place and securely attached. ☐ Yes ☐ No
7. Equipment runs and tested to assure all components are operating correctly. ☐ Yes ☐ No
8. Do you have a Wear Parts Kit with an Extra Cutter set in stock? ☐ Yes ☐ No
9. Did you join Remove Faster News for tech updates, experience sharing and special offers? ☐ Yes ☐ No

Comments (add any additional or from above answers below)

_____

_____

Special offer for Wear Parts Kit and Carbide Cutter drum if purchased within 30 days after activation.

Signature: _____

X3™ USER'S MANUAL

SMITH **X3 Troubleshooting:** Adjustment of down pressure screws.
Problem: The X3 units seem to be cutting on one side or cutting speed is slow.
Reason: Pressure Spring collar (s) become loose on the depth control screw (s).
Repairing issue: The three depth adjusting screws have locking collars at the top of the springs. These are secured to the large acme screws with a set screw through the side of the locking collar. If the setscrew loosens, you will loose the ability to set pressure and or the ability to change the depth side to side.
Remedy: Follow these instructions:

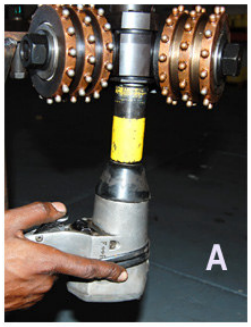
1. Visually inspect the spring collars to insure they are secure on the shaft. Raise the inner frame with the three adjusting screws until level with the outer frame. Use a ruler at the four points to level.

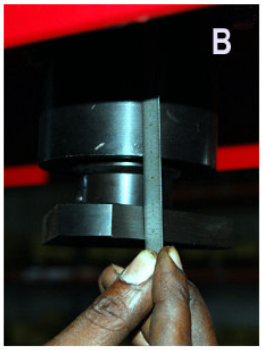
2. Visually inspect the distance from the locking collar to the underside of the plate welded to the outer frame. They should all be set at the same distance and all three springs should be compressed. (These are the shock absorbing springs to allow the unit to rise in the event you hit a high spot on the surface).
3. If the spring (s) is loose or the collars are not set at the same point, adjustment should be made to insure all three (pressure springs) are set at the same tension.
4. The simplest way to reset these collars is to elevate the screws to the same position when measured from the cover (gas engine models) or the inner frame to the top of the outer frame (hydraulic models). This is the point that the lock collars should be tightened at. Generally the measurement from the inner frame to the top of the locking collar will be approximately 3-¾". This is not a hard fast measurement and should be used as a general setting point. This dimension is non critical and may vary unit to unit. It is only a reference point and the most important issue is all three are set at the same point.
5. Securely tighten the collar setscrews to prevent movement.
6. Lower the unit slightly away from the underside of the welded plates and the adjustment is complete.

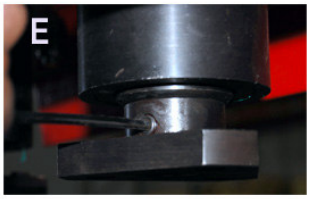
X3™ USER'S MANUAL

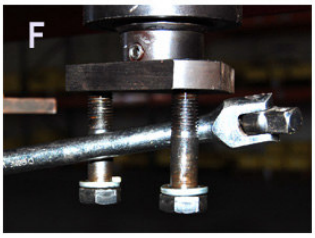
Troubleshooting: Verifying all three cutters are set at correct depth.
Problem: The cutter spindles are out of alignment at varying heights.
Reason: The threaded top plate backed off and must be tightened
Repairing issue: Use the following tools and directions to obtain correct height of all three cutters

Tools:
1. 1/2" drive impact wrench
2. 15/16" deep socket
3. 2-1/4" short hand wrench
4. 3/16" allen wrench
5. 6" straight ruler
6. 1/2" breaker bar
7. Propane torch,









Height Re-adjustment Procedures
1 Remove three sets of cutters (A) with (#1, #2).
2 Confirm height (#5) of each spindle (B) is same. If not go to next step
3 Locate set screw (C) and remove Loctite (D) with torch (#7)
4 Loosen set screw (E) on threaded shaft with (#4) for preparation for spindle tightening.
5 Re-use the 3 screws (F) from spindle in top plate to use as a turning lever (#6)
6 Before tightening, (G) locate 2-1/4" nut on top of the spindle drive shaft and below the lovejoy couplers (#3)
7 Tighten, measure height and add Loctite to clean spindle parts then reassemble.
8 If there are questions, please contact your local SMITH Representative.

X3™ USER'S MANUAL

Troubleshooting: **Belt Replacement**

Tools:
½" drive wrench with ¾" socket
9/16" & ¾" open end wrench
3/16", 5/32", 1/8" allen key wrench
Screw driver – flat head
Nipper Pliers

REMOVE
1. Disconnect gas line
2. Remove Bobtach mount
3. Lower engine with depth controllers
4. Lower yoke to access engine
5. Disconnect throttle cable
6. Remove battery cables
7. Remove 4 engine mount bolts
8. Remove 2 belt tensioner jam nut
9. Remove 2 belt tensioning screws
10. Remove front depth control handle
11. Lift engine with plate off inner frame
12. Set engine upright
13. Remove belt cover plate

REPLACE
14. Replace belt using depicted wrap
    Replace cover plate & depth handle
15. Replace engine on inner frame mount
16. Slip drive belt over engine pulley (17)

BELT TENSIONING
Fit 4 engine screws on mount plate (7)
Tension screws & tighten evenly (9)
When belt is snug, tighten jam nuts (8)
Tighten 4 engine screws (7)

FINAL STEPS
18. Fasten bolts on 2 cover plates.
    Reconnect engine cables (6)
    Reconnect throttle cable (5)
    Raise depth controls to level engine (3)
19. Reposition Bobtach plate straight

NOTE: Always maintain an extra drive belt in stock. Look at the condition of your cutters, spindle, bearings, air-filter and wheels prior to start-up.

If you need more details, a video is available on-line or contact SMITH at 800-653-9311